

CLAIMS

1. An earphone antenna connecting device for connecting an earphone antenna including high- and low-frequency signal transmission lines to a portable radio set via a pin-plug connector, the device comprising:
 - a conversion board formed from a double-sided printed circuit board having formed therein pin insertion holes in which pins of the pin-plug connector are to be inserted,

the conversion board having formed on one side thereof a connecting pattern having connecting lands formed around the pin insertion holes, respectively, and connecting lands to which the transmission lines are to be connected, and on the other side a grounding pattern not including a portion of the conversion board where there are formed the pin insertion holes for the pins to which the antenna signal lines are to be connected, and which is formed to surround at least three sides of each of the pin insertion holes in which signal pins through which the low-frequency signal is to pass are to be inserted.

2. The device according to claim 1, wherein there is connected to the portable radio set body via the pin-plug connector the earphone antenna which is a sleeve antenna formed from a coaxial wire as high- and low-frequency signal transmission lines formed from an audio signal wire and antenna signal wire, which are core conductors, and an antenna/sound grounding wire as a shielding wire, and an earphone cable

connected to one end of the coaxial wire via a means for separating the high- and low-frequency signals from each other,

the pin-plug connector being connected to the other end of the coaxial wire.

3. A portable radio set to which an earphone antenna including a high- and low-frequency signal transmission lines to a portable radio set via an earphone antenna connecting device using a pin-plug connector, the earphone antenna connecting device comprising:

a conversion board formed from a double-sided printed circuit board having formed therein pin insertion holes in which pins of the pin-plug connector are to be inserted,

the conversion board having formed on one side thereof a connecting pattern having connecting lands formed around the pin insertion holes, respectively, and connecting lands to which the transmission lines are to be connected, and on the other side a grounding pattern not including a portion of the conversion board where there are formed the pin insertion holes for the pins to which the antenna signal lines are to be connected, and which is formed to surround at least three sides of each of the pin insertion holes in which signal pins through which the low-frequency signal is to pass are to be inserted.

4. The portable radio set according to claim 3, wherein the earphone antenna is a sleeve antenna formed from a coaxial wire as a transmission line for the high- and low-frequency signals, formed from an audio and antenna signal wires as core

conductors and an antenna/sound grounding wire as a shielding wire, and an earphone cable connected to one end of the coaxial wire via a means for separating the high- and low-frequency signals from each other,

the earphone antenna connecting device has the pin-plug connector thereof connected to the other end of the coaxial wire.